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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/796,179

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Shinji Kobayashi

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EXAMINER

EDWARDS, LAURA ESTELLE

ART UNIT

PAPER NUMBER

1792

NOTIFICATION DATE

DELIVERY MODE

05/15/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/796,179	Applicant(s) KOBAYASHI ET AL.	
	Examiner Laura Edwards	Art Unit 1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 February 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 17-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
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| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>20040310, 20040510</u> . | 6) <input type="checkbox"/> Other: _____ |

Restriction/Election

Applicants' election without traverse of Group I, claims 1-16 is acknowledged.

Claim Rejections - 35 USC § 102

The basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4, 9, 12, and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Matsuda et al (US 6,494,220) hereinafter referred to as Matsuda.

Matsuda provides a liquid processing apparatus for forming a coating film on a shaped substrate comprising a spin chuck (10) including a support plate for substantially horizontally supporting the substrate thereon, the spin chuck rotating the substrate in a substantially horizontal plane; a cup (26) disposed around the substrate supported on the spin chuck; an exhaust unit (EXHAUST) for evacuating an inside of the cup; a supply nozzle (14) for supplying a coating/cleaning solution to a top surface of the substrate supported on the spin chuck; and at least one air flow control member (33) connected onto the spin chuck, the air flow control member being disposed adjacent to a periphery of the polygonal substrate supported on the spin chuck, wherein the air flow control member is not provided near peripheral [corner] portions of the substrate supported on the spin chuck.

With respect to claims 2/15, the cup (26) is movable up and down as evidenced by col. 4, lines 1-7 such that the air flow control member would be capable of being at the same level of the supported substrate.

With respect to claim 3, the air flow control member has a flat portion (33').

With respect to claim 4, wall (33'') can arc or curve as shown in Fig. 2.

With respect to claim 9, see vent hole (not numbered) central of shaft (11) in fluid communication with exhaust (left hand side of Fig. 5).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuda et al (US 6,494,220) in view of Kitano et al (US 6,537,373), hereinafter referred to as Kitano.

The teachings of Matsuda have been mentioned above but Matsuda is silent concerning the use of upright walls facing the substrate. However, it was known in the art, at the time the invention was made, to provide upright walls (70, 71) adjacent and facing the substrate to act as masking members as evidenced by Kitano (see Fig. 4). It would have been obvious to one of

ordinary skill in the art to provide upright walls as taught by Kitano adjacent and facing the substrate in the Matsuda apparatus in order to act as masking members during the processing of the substrate.

Claims 6 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuda et al (US 6,494,220) in view of Ruhl et al (US 2005/0016468), hereinafter referred to as Ruhl.

The teachings of Matsuda have been mentioned above but Matsuda is silent concerning the use of a chuck with a support plate with cutout at the corners. However, it was known in the art, at the time the invention was made, to provide a support plate with cutouts of an appropriate dimension at the corners in order to provide for uniform deposition of material on the square substrate as evidenced by Ruhl (see [0002 and 0014]). In light of the teachings of Ruhl, it would have been obvious to one of ordinary skill in the art to provide a wafer workholder including corner cutouts in order to provide for uniform deposition of material on the shaped substrate, esp., square substrate.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuda et al (US 6,494,220) in view of Ruhl et al (US 2005/0016468), as applied to claim 6 above, and further in view of Matsukawa et al (US 5,518,542), hereinafter referred to as Matsukawa.

The teachings of Matsuda and Ruhl have been mentioned above but neither teach nor suggest a transfer arm with support extrusions. However, it was known in the art, at the time the invention was made, to provide a transfer arm with support extrusions to transport a substrate from one processing station to another as evidenced by Matsukawa (See Fig. 7, 111a/111b). In

light of the teachings of Matsukawa, it would have been obvious to one of ordinary skill in the art to provide a transfer arm as taught by Matsukawa in the apparatus defined by the combination above in order to facilitate transport a substrate from one processing station to the next.

Claims 10 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuda et al (US 6,494,220).

The teachings of Matsuda have been mentioned above but Matsuda is silent concerning the ventilation hole being on a corner of a substrate. However, because Matsuda does provide at least one ventilation hole, it would have been within the purview of one skilled in the art to place the hole as desired with respect to the substrate in order to remove processing fluid(s) away from the substrate. Applicants should note that the one vent hole can only be provided at one location not a plurality of locations as recited in claim 10.

With respect to claim 10, a gap exists between the chuck and the air flow control member as shown in Fig. 5.

Claims 11, 13, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuda et al (US 6,494,220) in view of Yoshihara et al (US 6,527,860), hereinafter referred to as Yoshihara.

The teachings of Matsuda have been mentioned above but Matsuda is silent concerning a movably controlled ring plate. However, it was known in the art, at the time the invention was made, to provide a movably controlled ring plate with respect to a supported substrate within a processing cup in order to facilitate the control of air flow during processing as evidenced by

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Yoshihara (see member 25). In light of the teachings of Yoshihara, it would have been obvious to one of ordinary skill in the art to provide a movably controlled ring plate as taught by Yoshihara in the Matsukawa apparatus in order to further facilitate control of air flow during processing.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura Edwards whose telephone number is (571) 272-1227. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nadine Norton can be reached on (571) 272-1465. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Laura Edwards/
Primary Examiner
Art Unit 1792

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5/12/08